Westfälische Wilhelms-Universität Münster

FACHBEREICH PHYSIK

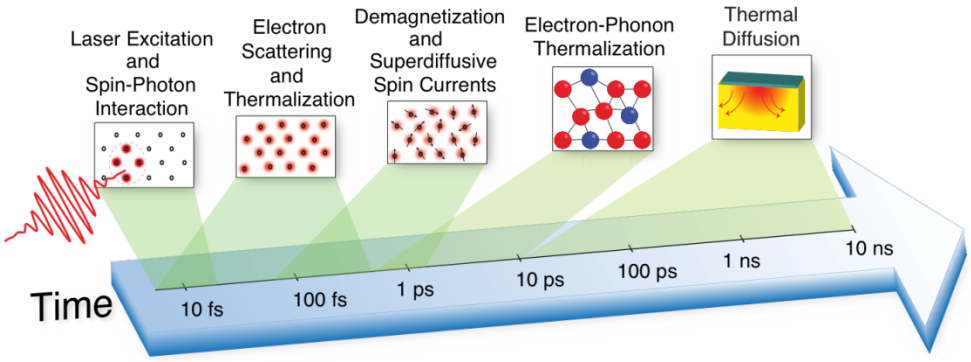
Allgemeines Physikalisches Kolloquium

Donnerstag, 11.12.2014 um 16 Uhr c.t.

Prof. Dr. Martin Aeschlimann
Technische Universität Kaiserslautern

Tunable ultrafast magnetic response in ferromagnetic materials

The study of ultrafast dynamics in magnetic materials provides rich opportunities for greater fundamental understanding of correlated phenomena in solid-state matter, because many of the basic microscopic mechanisms involved are as-yet unclear and are still being uncovered. In this research area, new developments in laser-based femtosecond x-ray and extreme-ultraviolet sources make it possible to probe element-specific spin dynamics in multispecies magnetic systems. These nascent optical tools therefore provide new and detailed information that is mostly not accessible by using visible light, and allow for the design of experiments that can help to identify the microscopic mechanisms of ultrafast spin dynamics.



Schematic timeline of ultrafast photon–electron–spin–lattice interactions after an ultrafast laser excitation. We use extreme ultraviolet pulses from high-harmonic generation to disentangle the microscopic processes of spin-flip scattering and spin-currents in ferromagnetic multilayer structures.

IG1 HS2, Wilhelm-Klemm-Straße 10
Kolloquiums-Kaffee ab 16.00 Uhr vor dem Hörsaal
Im Anschluss an den Vortrag findet ein geselliges Beisammensein mit Getränken und Knabbereien statt.

Kolloquiumsbeauftragter: Prof. Dr. Bratschitsch
Einladender: Prof. Dr. Helmut Zacharias